/147 cont./

223 noose is released when the animal takes the bait, and at the same time the gallows springs back and pulls the animal up in the air by its neck. Concerning the material used to make the noose, see page 41 . The arrowheads of the Auin are generally
411 poisoned. I have also found arrows which had only a single unpoisoned bone point. These are used for sport, perhaps also for killing small birds.

278 Manufacture of the arrow poison. Burkea africana (firewood of the Bushmen) is inhabited during the rainy season by a beetle (or a species of termite?) which toward the end of the rainy season pupates in the soil under the tree. The larvae are dug up, killed, dried in the sun, and rubbed between stones.

Roots of the thorny tschamma (Cucumis heptactylus Naud.) are laid on red-hot coals, taken out warm, and the bitter sap pressed out. This sap is mixed with the poisonous paste, and the resulting dirty, reddish-brown preparation represents the finished arrow poison. The poison is applied to the arrow point in a layer several millimeters thick and dries there.

278 The Bushmen greatly fear their own arrow poison and always carry the poisoned point hidden in the shaft. The poisoned end
411 is exposed only just before it is to be used. The layer of poison on the iron points, which because of their width cannot be concealed in the arrow shaft, is always wrapped with bast which is not taken off until the arrow is to be used. All Auin can make arrow poison and readily demonstrate the process.

224 The decorative scars described on page 16 are to be regarded
304 as hunting trophies.

521 The hunters supposedly tell exaggerated tales. Quarrels on
578 these occasions sometimes end in bloodshed.

[231] The only domestic animal is the dog.

757 The Bushman doctor is supposed to let blood for healing purposes. For instance, in the case of a man who could not run well, bloody incisions were made in his upper thigh. On the other hand, I do not know whether this procedure can be described as "bloodletting." Scars from such incisions were shown to me several times.

413 The surgical instrument is a little sharpened piece of iron.

/159 cont./

756 with a considerable portion of actual experience and knowledge.

The doctors are paid for their efforts.

There are also female doctors.

[648] I have observed no sign of hostility toward Whites among these people. They know how to evade observation, however, even better than the ordinary Bushman, and that says a good deal.

Only the doctor may eat a certain kind of poisonous snake, apparently the so-called black mamba, which I regard as an older type of cobra.

U. Totemism

771 I was unable to observe any indications that might lead one to deduce the existence of totemism.

V. Medicine

755 A man who was suffering from headache had colored his forehead with a black grease that supposedly had curative powers and had wound a thin thong firmly around his head. Our household remedy of firmly squeezing the sides of the aching head with both hands was familiar to the Auin.

● 278 752 The Bushman doctor makes an antidote from the black mamba, which he alone may eat. This antidote is supposed to help against the bites of all snakes, except that of the mamba itself.

He dries and pulverizes the lungs, gall, and liver, as well as the poisonous fangs with the poison glands. This powder is stirred into a paste with the fat of the same snake, and the paste, so I was informed, is rubbed into the enlarged wound, which has first been sucked out.

At the same time, various deep incisions are made on the upper arm and chest, from which considerable blood flows.

278 Poisons that work internally are not manufactured. The Auin maintain, however, that the arrow poison also works internally.

The manufacture of arrow poison was described above.

/159 cont./

278 752 [411] Poisoned arrows shot into the chest and abdomen are described as unconditionally deadly. Arrow wounds on extremities, as well as very superficial ones, are supposed to be curable under certain circumstances if immediate help is provided.

[751] There is no inoculation against arrow poison.

[827] An older Auin suffering from badly inflamed eyes attributed this illness to an arrow wound he had received many years earlier. His statement, of course, cannot be verified.

165 Malaria is endemic and annually exacts many lives. The number of cases resulting in death was especially great in 1908-1909. Whole settlements are supposed to have died out. Epidemics were unknown even to the "oldest people."

Venereal diseases are blessings of civilization, but evidently not yet widespread.

731 Famine actually prevails every year toward the end of the dry season, especially if the preceding rainy season has been poor. During this time, almost all the Auin are emaciated to skeletons. Death by hunger is not supposed to /160/ occur. After all, the Bushman always finds something to eat, even if it is only grass seeds.

756 The so-called doctors decidedly possess great experience in medical matters, which, however, does not prevent them from practicing considerable charlatanism (see Section T).

W. Time Reckoning, Astonomy

805 The day is divided according to the position of the sun.

Certain time segments are indicated with great exactitude according to the position of the sun. If one asks a Bushman, "How far is it to the watering place?" he will point to the place in the sky that the sun will have reached by the time one gets there.

The concept of the month is known (gnui, "month").

The relation of the solar year to lunar months is unknown.

The Auin divides up the year, for which, incidentally, he has no definite, but rather only a very vague concept, as follows:

[12 cont.]

000 439 occupation. Even among the nomadic groups, however, meat, hides, and so forth are commonly traded for millet.

[222] Also, the Blacks like to have veldkost on their table, and the Bushmen, like our sponge and berry gatherers, use their knowledge to supply them and carry on petty trade with their veldkost, as well as with honey.

222 137 This is the reason that veldkost, which is either scarce or not very tasty, is not gathered at all any more; indeed, the knowledge of its presence is even disappearing. We must also not forget that the black shepherd boys long ago acquired the knowledge of the Bushmen by observing them. As a result, the number of those interested has naturally climbed sharply, and the veldkost plants have become rare. The following kinds are still regularly gathered:

222 /airoba (ombimbo) Sweetish, very starchy tubers, like large potatoes.

/érui (omauungă) Galls on the leaves of the omsati tree.

≠gan-i (esarata) Small fruit.

!Khui-i (oombi) Dates.

!Korob-ke (oompali) Bulbs at the roots of a liana.

251 439 Dried meat is made from kudu flesh, which in part is kept and in part sold.

● 278 [13] Arrow poison is made from the sap of a tree (Euphorbiacea), !Khores-Ke. The Ondonga themselves make no [439] arrow poison, but buy it from the Bushmen for one to two sh per 752 portion. There is no medicine against arrow poison. Deep incisions are made at the place where the arrow entered, and after blood has flowed freely from the wound, it is sucked. In the case of snakebite the same procedure is followed, and some arrow poison is placed on the wound (!!!).

278 609 Our Bushmen denied any knowledge of poisons added to food. Only the "evil Bushmen" in the east had such knowledge, they claimed. This statement scarcely deserves credence.

177 In clothing, dwellings, and weapons, as well as ornaments, not much that is original remains. The process of Bantuization is much further advanced in the material culture than in the spiritual culture. It is, after all, easier to part with clothing than with ideas.

[39 cont.]

192 411 sometimes radial and sometimes in rows, is called !khui. The incision at the lower end of the arrow shaft is called /gei. The arrow points are usually little triangular iron plates (//khai). The entire tip, including the binding and the poisoned part, is called !hui. [Figs. 10 and 11 appear here.]

411 ● 278 [463] The arrows are 65 to 68 centimeters long. They are usually poisoned. The poison, which looks like dark wax, is smeared on little sticks and preserved in this way. It consists of five ingredients, the most important of which is euphorbia sap. Only

[824]

Fig. 10. Buphane disticha Herb., Plant Used for Arrow Poison by the !Kung (Medley Wood, Natal Plants, VI, 1912).

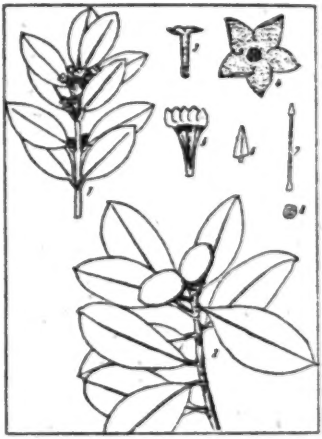

Fig. 11. Acocanthera venenata, Plant Used for Arrow Poison by the !Kung (Sim, The Forests and Forest Flora of the Colony of the Cape of Good Hope, 1907).

certain persons prepare the poison. They know that the plant poisons are not equally effective every year. Hence, a small bushbuck is shot first, then a larger animal (say, a leopard), and finally a gemsbok. Only when the proper results are obtained with all these animals is the poison traded.

411 The lances of the !Kung consist of a shaft about 160 centimeters long, which is greatly reduced in thickness toward the back end.

[39 cont.]

411 The head is made of a quadrangular piece of iron 30 to 40 centimeters long and set into the shaft with a short connective piece. The shaft is reinforced at this point by a winding of iron wire.
[40] [Fig. 12 appears here.]

[41] Musical Instruments

534 [439] Large dance drums are very popular, but are not made by the !Kung themselves; they are obtained in trade from the Okawango. Once, when I purchased such a drum from a trader [422] of ostrich egg beads in the region of Kuntsas (the drum always belongs to a specific person; collective ownership of utilitarian objects is unknown among the Bushmen), he asked me to let him keep the drum until evening so that each man would be able to drum once more. The dance rattles made of fruit are no longer to be found except in very small numbers. The !Kung are also supposed to possess wooden trumpets used on special occasions. I have never seen them.

413 [304] Finally a small number of special utilitarian objects should be mentioned. In practicing their calling, the doctors use cupping glasses, made of antelope horn, and blunt little sticks to knock out 177 teeth. Poisons and medicines are now manufactured and cooked 415 in empty tin cans; in fact, tin cans and tin gasoline containers are 278 gradually becoming universal objects even among the Bushmen. 805 Messenger sticks or calendar sticks are made on special occasions; 211 these are little staffs or little boards with one or two rows of holes. For example, if I tell the Bushman that I will return in five months, he will draw a string through five of the holes and knot it. At each full moon, the string is drawn back one hole.

12. Social Organization

622 [614] [888] [623] Each kin group has a chief, whose position is hereditary. To be sure, his powers are insignificant because one's whole life is public, so to speak, and the authority of the old men is so great that the decisions arrived at are essentially agreements BETWEEN THE CHIEF AND THE OTHER OLD MEN.

[TEXT CONTINUES ON P. 25]

[43 cont.]

423 614 769 "The graves of the ancestors are within the kin group's territory. They are marked by the large piles of stone placed on them. The ancestors are regarded as the guardians of the kin group's territory. Hence, departure from the territory must be announced by the chief or an elder at the ancestral grave without special ceremonies; similarly, an announcement must be made there when the kin group again moves into the territory."

423 614 The property of the kin group, aside from its territory, includes the veldkost, the game, and, above all, the watering place.

13. Illnesses and Treatment

826 The anatomical knowledge of the Bushmen is quite extensive as a result of their way of life as hunters.

[761] The heart is regarded as the seat of life, and the breath has some connection with the heart. Their surgical knowledge is 752 757 confined to the extraction of thorns by means of an awl-like instrument and to the relatively effective bandaging of hand and leg 278 fractures. Their supply of medicines, on the other hand, is very limited. In what follows, I shall list the common illnesses and their treatment.

Eye Inflammation

752 Both dry and exudative eye inflammations, caused by sand and irritating grass seeds, are extremely widespread, and blear eyes are the rule among older people. These diseases, however, are not nearly as grave among the !Kung living in the forest as, say, among the Bushmen of the western Kalahari or among those [826] of Naukluft. Among the latter, blear eyes are even regarded as signs of beauty in young girls. Ordinary eye inflammations that pass in a short period of time mean nothing. They are treated by [753] rubbing with fat. If the ailment lasts for a longer period of time, then //Gauab [Fig. 16 appears here] certainly had something to [755] do with it; the doctor is called in and, after some treatment, produces a "little black medicine" from the eye.

[44 cont.]

000 757 278 from the fire. As a cure for coughing and hoarseness, they chew the fibers of a sisal-like plant, which are twisted to make the trap cord. The plant is called kûi. It must be brought fresh from the forest. For chest pains, in recent times they have started drinking warm water to which much cooking salt is added.

[413] Fig. 17. !Kung Instrument for Knocking Out Teeth; actual size [as shown in original text].

Circulatory Diseases

164 278 751

As among the Central African Pygmies, we find strong sinuosity of the arteria temporalis even among more youthful individuals. The heart quickly wears itself out as a result of the exhausting way of life and the great amount of running. The people try to increase its capabilities in every way possible. In order to stop the pounding of the heart and to run longer, they take the leaves of a tree with red fruit (in-gui). These leaves are chewed and swallowed. If this does no good, they chew the root of the ≠Na tree. If a person has a heart pain so that he cannot run, he takes roots of the Dormakar bush (!gu) and of the Hell bush (!gai !dsao), boils them both, and drinks the decoction. In case of angina pectoris, the skin of a boa constrictor is placed around the chest.

Gastrointestinal Disorders

753 [171] It is interesting to note that the doctrine of the importance of the liver and gall bladder in the origin of disease, which we find among all primitive and civilized peoples up to the humoral medicine of the previous century, is already present among the Bushmen. When the gall bladder is full, one becomes sick and [755] vomits gall. Then the region of the liver is massaged, just as is done in the case of liver pains. Enlargement of the liver as the [164] result of chronic malaria is common. The moon, which dies [621] every month, also has gall sickness, and moonlight is the juice of the gall bladder vomited by it. Moonlight and gall are known [164] by the same word (goo). Spleen tumor is especially common among children. They have no medicine against splenalgia. 757 278 They have no medicine for inducing vomiting. It is induced by putting the finger or a feather into the mouth. To stop vomiting, one chews little twigs of the goro tree. The bitter wood of the liana (X'áá-X'áñ) is chewed for stomach-ache. In case of con- [753] stipation the doctor must practice magic, for it is assumed that [755] the dsao have tied the stool in the intestine, and the doctor must loosen and extract the cord, just as in the case of an inflammation of the throat. The patient may not eat anything and drink very little. In case of diarrhea, even the bleeding kind, the same medicine is taken as in the case of stomach-aches. Intestinal 147 worms are unknown. We already know from earlier reports that the 262 gastrointestinal tract of the Bushman can take all kinds of things that we cannot take. As the result of habituation from early child- hood on, he can digest meat that has gone bad and the like without any trouble (1). After a long period of hunger, he can consume

1. I myself witnessed a drastic example of this. I had brought a side of bacon from Swakopmund, which supposedly had been preserved for all eternity according to a special process. When I brought it out, it had a hideous smell, and in order to prevent the Bushmen from taking it and getting sick, I had it hung high on a tree. The

[45 cont.]
Dr. Kasi. The people died. Very evil dsao were involved. The terminology for the description of the external genitalia is by no means as rich as among the Bantu. The women's pubic hair is usually plucked out by their husbands. Hence, it is called virgin hair. The connection [46] between cohabitation and pregnancy is known. Impotence and sterility occur; there is no medicine for them. When menstruation fails to occur, nothing special is done. The menstruating woman may only eat with her husband and may not go around tasting food. A warm stone is placed on the stomach for menstrual pains. Children are nursed at least until the birth of the next child. The nipples are distinguished by a leathery firmness. Nevertheless, mastitis does occur.

The contention that venereal diseases are very widespread is incorrect; as such they are even unknown to the Bushmen. In isolated cases I have met Bushmen on the farms with vestigial gonorrhea. Syphilis is very rare among the wild Bushman.

Skin Diseases

The wild Bushman scarcely knows anything about skin care. Since there is a lack of both water and fat, the skin, which as a rule feels silky, soft, warm, and dry, becomes cracked, and infections easily occur. A chronic eczema (gari), evidently caused by a fungus, is very widespread. To combat it, they use the milky sap of a plant called timba.

Hair Diseases

A nonmalignant hair disease that is very widespread among all the Bantu, causing the hair to fall out in roughly circular spots, is also found among the Bushmen. In addition, as among the Bushmen of Naukluft, the so-called "porcelain head" occurs, a disease that destroys the entire hair base, and the head gleams like porcelain. The hair becomes gray relatively early. Loss of hair is rare; it usually occurs in the form of baldness characteristic of schizothymia. The rounded fingernails are worn fairly long; the toenails are often fissured.

!KUNG

[46 cont.]

Infectious Diseases

164 The Bushmen are plagued by the two most dangerous chronic infectious diseases, tuberculosis and malaria. Leprosy is absent.

Malaria appears every year during the rainy season. Bisob [757] roots are then thrown in the fire, and the smoke is inhaled. Small [278] children more commonly die of it. I did not see any cases of black water fever or malarial cachexia.

Tuberculosis is the common cause of death among the [165] Bushmen. I saw bone tuberculosis and swellings of the glands, as well as advanced cases of lung and throat tuberculosis. The poor people are helpless, and the frequent colds further the process in a dangerous fashion. As nomads living in small groups, they are generally spared the epidemics of the Whites and Blacks. Once an epidemic has made its appearance among them, however, they die in great numbers. It is interesting to note that the Bushmen are aware that contagious diseases exist. As such, however, they only know the above-mentioned skin disease (gari).

753 The other infectious general diseases are explained as an attack by many spirits of sickness upon the horde.

Assistance at Birth

844 When a young woman anticipates her first confinement, she remains near the huts because she is afraid. The older women cheer her up, and then a resting place is made of dried grass. The woman gives birth in a squatting position. In case of difficulties [845] during delivery, the lower part of the body is massaged. Medicine or manual assistance to expedite the delivery is not given. The umbilical cord is cut off with a quartz knife and buried.

[47] Wounds and Injuries

752 The most dangerous injury a Bushman can receive is through a poisoned arrow. The poisoned arrow is cut out, a piece of wood is held in the fire until it glows, and then it is used to

[47 cont.]

752 burn the wounded person at many places on his body. When the poison smells the warmth, it gathers at these places; incisions are then made there, and the blood is sucked out by means of a cupping glass made of gemsbok horn. The wounded person may neither sit nor lie down; he must be walked about for twenty-four hours. After this time he either dies or is cured. The method helps only in rare cases.

Snakebite is the second great danger. If one makes an
751 incision in the lower part of the calf and rubs scrapings from a
824 bisob root into it, the snakes smell this and do not come out of
825 hiding. [Fig. 18 appears here.] When a person has to run great distances, bisob dust is mixed with fat and applied
752 to the legs. In case someone is nevertheless
(411) bitten by a snake, the treatment is analogous to that used for arrow wounds. Injuries to the feet caused by thorns are very common. Injuries that pass through the aponeurosis are regarded as deadly. They practically always become infected. Even though wound infections take a less malignant and a slower course than among Europeans, they nonetheless sometimes lead to death. The only medicine
(278) used is bisob powder scattered in the wound.

Fig. 18. Kirri of the !Kung.

Some doctors claimed to be immune
751 to snake and scorpion bites.

What Vedder observed among the Bergdama is reported in a similar manner by Schinz:

"With the intention of testing the latter characteristic, I one day persuaded an old sorcerer visiting us in Noi !as on Ngami Lake to undertake an experiment with 12 scorpions (Buthus randus Simon) picked out by myself and having an average length of eight centimeters. In order to prevent any possibility of deception, I put the animals on the various parts of his body with tweezers, on the hands, legs, arms, mouth, and testicles. As a rule they then immediately and excitedly moved the long postabdomen back and forth and jabbed violently once or twice into the flesh of the guinea

!KUNG

[50 cont.]

751 concerning the witch doctors:

756 [51] "The sorcerer can protect himself against the malignant spirits of evil deceased persons. After all, he can see them and knows the means for defending himself against them. The ordinary Bushman has no eye for them, but he has a means of keeping them at arm's length. In a small leather bag about as long as a finger [411] he keeps a bow carved out of horn and numerous horn arrows stuck in a shaft of sour grass [Cyperaceae]. If he has occasion to fear evil spirits, he shoots these miniature arrows in all directions with his miniature bow. Now the evil spirits cannot get at him.

"Since in addition he has the belief that an object merely thrown in the direction of a hated person in some mysterious fashion enters that person's body and gravely harms him, he likewise uses his miniature bow to keep a pursuer or enemy off his neck by shooting an arrow, with a curse, in the direction where he imagines his enemy to be, even when he knows that this person is miles away from him."

Whereas I myself and the highly experienced J. Lunkenbein regard these Bushman revolvers as harmless magical instruments, 411 [114] Seiner has a different opinion:

"The 'revolver' is a definite instrument of murder carried hidden in the modesty apron. The bow is ten centimeters long, the arrows are from ten to 12 centimeters long, and with the former they are put in a little bag adorned with beads. In addition it should be noted that the arrows, which are wrapped crosswise with little bands of tendon, are poisoned by being smeared with [278] little bits from the body of the arrow poison caterpillar. The Bushman ordinarily crushes a few of the caterpillars, which are available only in December and January, living on a few Commiphora shrubs (Commiphora dinteri, C. seineri) or as pupa at the roots under the ground, in a bone vessel with a little wooden stick that is always in the quivers; then he smears the arrow with some sticky stuff, such as wax or resin, whereupon he brushes the arrow with the viscous, slimy caterpillar mass, which, after drying, covers the arrow as a more or less thick brown crust. Up to a distance of seven meters it is possible to puncture the skin, drawing blood, with this miniature arrow; if the arrow tip were not blunt but pointed, like the one placed in the grass shaft, the arrow would

[62 cont.]

293 Like the prehistoric Bushmen, these people, too, wear forehead bands, into which the arrows are stuck during the hunt.

726 Dornan (p. 139) reports that the Kalahari Bushmen hold
754 dances before the start of a war, and on these occasions they shoot little poisoned arrows from equally small bows in the direction of the enemy or of the sun. They believe that in so doing they are killing the shadow spirit of the enemy. They do not like to give these miniature bows and arrows to anyone because they are afraid that they might come into the possession of their enemies and thus bring about their own deaths.

226 Fishing is still quite well developed among the Masarwa people. Stone walls are sometimes built in the river, in which weir-baskets are set, or they sit in the river bed next to one another with weir-baskets, while women and children drive the fish toward them. In smaller waterholes, grass and brush are piled up on one side. Then the Bushmen step into the water and push the grass wall ahead of them, thus driving the fish into a corner. Individual fish are also speared with the assagai. According to Hodson, the best fishermen are the Bakoba Bushmen on the Okovanggo. They have harpoons and rush nets that are drawn diagonally across the river.

● 278 G. A. Farini (3) had an opportunity to observe the

[113] 3. G. A. Farini, Durch die Kalahariwüste [Through the Kalahari Desert], Leipzig, 1886.

manufacture of arrow poison in the Chanse Veld. The men gathered at a certain place; women were not allowed to be present. The sap was removed from about 30 to 40 poisonous bulbs by means
[535] of successive incisions and was collected in a pan. As each incision was made, the Bushmen danced in a circle, making a kind of grunt. Then a hyena hide was spread out with the hair side down, and on it was spread the contents of the bags that contained the dried heads of poisonous snakes, as well as two pieces of reed approximately 15 centimeters long. Then a number of freshly killed poisonous snakes were brought. The poison sacs were removed amidst singing and the clapping of hands. Meanwhile the pan containing the poison had been put on the fire and was boiling;

[62 cont.]

278 one person after another stepped up to the pan and threw his share of snake poison into it. Then the pan was removed from the fire.
[535] The Bushmen now performed a new dance, in which they imitated the convulsions of animals dying from the poison. After another half hour the poison was clear, and when everyone had convinced himself that it was the right color, a red mineral powder was added and thoroughly stirred into it. Then poisonous spiders were taken out of the reeds and thrown into the [63] pan. These came from the Langen Mountain in the Cape Colony, in other words, had been brought from afar. When the mass had thickened somewhat more, the arrows were smeared with it and dried in the shade (ibid., p. 380).

595 These Bushmen, the M'Kabba, are monogamists.

563 Farini maintains (ibid., p. 171) that he met a black Pygmy who came from the tribe of the Kara-Kara north of Amboland (1).

1. At the mission station Urikualuthi I was told by the missionary, Mrs. Quarni, who has made most meritorious contributions to investigations of the country, that shortly before the war a number of black Pygmies who lived in the swamps along the Kunene had come to Chief Moala. She saw these people.

252 Concerning the food of the Bushmen, Dornan has the following to report: The Marsawa [sic] eat meat either roasted or grilled, rarely boiled, because they believe that the latter will
251 make them sick. The Bushmen of Basutoland cut the meat into tiny pieces, mixed it with fat, and then sewed it into hide sacks as preserved meat. As reserves in case of famine, the Kalahari Bushmen keep giraffe skins on tall trees. Veldkost is stored in turtle shells and ostrich eggs, as is water. The Basutoland Bushmen gathered grass seeds and stored them for times of hunger.

252 The tsama are prepared in the following manner: A hole is dug, and a fire is made in it. As soon as the soil is sufficiently

[63 cont.]

252 hot, the ashes and fire are taken out, the melons are placed in the hot soil, and the glowing ashes are thrown on them. The next morning the tsama are ready.

301 The largest ostrich egg beads are produced by the Masarwa.

532 535 Their dance masks are made with pods and cocoons, and sometimes also small hide balls filled with little rattle stones.

323 They still know the art of pottery. White or red body painting is

302 customary.

304 A Bushman tribe at Ngami Lake is supposed to have the custom of removing the last joint of the little finger.

278 Dornan mentions the following medicines of the Masarwa: for black water fever, Anacampseros rhodesica; dysentery, Monsonia ovata and Euclea lanceolata. Other medicines: Cannabis sativa, Solanum nigrum, Lippia asperifolia, Crotalaria burkeana, Pterocarpus angolensis, Datura stramonium, Indigifera senegalensis, Bauhinia reticulata.

752 The Masarwa claim that they can only treat the bite of the puff adder. The body of the Lygosoma sundervalli is charred, and the powder is sprinkled into the wound. Every snake is killed, and

(751) its head crushed. Reportedly there are also inoculations against snakebite.

595 836 684 According to Dornan, monogamy prevails among the Masarwa. Sexual intercourse before marriage is prohibited, and incest and adultery are punishable by death. As a rule, the con-

584 sent of the girl is necessary for marriage; it is generally sufficient if the suitor presents his father-in-law with a head of big game. The hunting test is customary only among the Wankie Bushmen

582 and those of Bulalima. One may marry a girl from the same clan. Among those tribes that are totemistically influenced, one may

304 not marry a person of the same totem. Circumcision is practiced.

881 As soon as the boys and girls are about 12 years old, circumcision takes place, for which a stone knife is used. In the case of the

(836) girls, the clitoris is pierced with a stone point. Sexual intercourse between the uncircumcised is strictly prohibited. Occasionally the nasal septum is pierced at the boys' initiation. As among the

761 Bantu, every death is explained as sorcery by human enemies. In

764 olden times the dead were supposedly thrown into the bush;

178 nowadays they are sometimes buried in a crouching position in

≠AUIN
NARON
NOGAU

[74 cont.]

776 one time as a man and at another time as a woman.

7. Medicine

757 The curing practices of the Nogau Bushmen are very primitive. They have nothing for snakebite and nothing for arrow poison.

778 Eland fat is a universal medicine. For the common eye inflammations this fat is smeared into the eye; for headaches warm eland fat is dripped into the ear; for a cold the nostrils and nose are smeared with eland fat.

753 [754] Sickness comes either from the evil head Gauab or from sorcerers. The ailment is caused by a little Gauab who has settled in the body. The more gravely ill a person is, the more Gauana have entered into him. The doctors are able to draw out these

755 756 spirits of sickness; they do it in a fashion analogous to that practiced by the !Kung. There are also female doctors.

753 776 The spirits of sickness are regarded here as much more material than among the !Kung; such a Gauab looks like a human being, but he may also appear as a lion, a wildebeest, or a snake. Once the Gauab has been drawn out of the body, it runs away and speaks to no one.

756 [825] The sorcerers in particular like to transform themselves into lions. Among the Bushmen farther north [75] it is supposedly the case that when they see a wildebeest in the bush, for example, it is not a wildebeest at all, but a Gauab. The doctors receive their power from the highest Gauab (/gaua //gaicha). He is the one who appears in the wind spouts. As among the Bantu, the doctors must go to school for several years with older colleagues.

[754] They are not only able to cure, but also to practice magic in the bad sense, in that they induce /Gaua //gaicha to make ill anyone whom they want to harm.

"Whoever wants to become a sorcerer must go to school with another witch doctor. When someone is struck by lightning, it is said that Gauab struck him down with his knife. Some then become great doctors and often speak with Gauab. Gauab also comes as a wind spout."

[75 cont.]

9. Hunting

224 Even today the western Kalahari has fairly abundant game, and life can be maintained at least to some extent by hunting. Before going to hunt, a tamana fruit (tse) is rubbed on the face. They also try to absorb the powers of the game by means of inoculation. For example, when a duiker has been killed, little pieces of the heart and ear are charred. This animal charcoal is then rubbed into an incision on the upper arm. Both in war and
(202) hunting, people communicate by means of smoke signals. The chief hunting weapon [76] is the bow with the poisoned arrow.
278 The poison (1) is obtained from the cocoons of a beetle larva that

(113)

1. Lewin has devoted several studies to Bushman poisons ("Pfeilgifte der Buschmänner [Arrow Poisons of the Bushmen]," Zeitschrift für Ethnologie, Vol. 44, 1912).

"When I was permitted to examine the first arrows armed with poison that Lichtenstein had brought home from his journey in the year 1806 and which are kept in the Museum for Ethnology here, I was able to establish that there is alkaloid in the poison, which initially had stimulating, and later paralyzing effects on spine and brain. Because of the small quantity of the material, nothing further could be determined, except for a curious color reaction that the alkaloid isolated from the poison produced with concentrated sulphuric acid.

"I have now succeeded in producing from the bulb of Haemanthus toxicarius, the 'poison bulb' of the old Dutch colonists, the most active ingredient, an alkaloid which chemically and toxically

[76 cont.]

278

corresponds to the active ingredient of the poison taken from the arrow. I gave it the name Haemanthin.

"After the subcutaneous injection of animals with the water soluble albumin isolated from Blepharida larvae six to seven milimeters long, disturbances of movement set in fairly rapidly. Food is no longer taken. It makes doves vomit, and, like rabbits, they also get diarrhea. They become quiet, they huddle motionless, and their eyelids, which for a time move almost ceaselessly, finally are affected by the lethargy or inability to move. The eyes are closed. The animals then fall into a sleep-like state and perish, but commonly only after many hours of difficult breathing. Dissection shows changes in the kidney."

A survey of the poisonous plants of South Africa has been supplied by J. M. Watt. In South Africa over five hundred species are used as medicinal plants, and 150 are regarded as dangerous poisonous plants. Most of the poisonous plants known to date have an effect like digitalis. The old arrow-poison plants of the Bushmen, Acokanthera venenata and A. spectabilis, which have been examined in greater detail by Moir, Lewis, and Curson, also belong to this category. It is striking that the poison has an extraordinary chemical and physical stability. For poisoning per os, Boweia volubilis is commonly used by the natives.

[137]

Literature: J.M.Watt, M.B., "The Present Position of our Knowledge of South African Medicinal and poisonous Plants,"

[113]

AUIN
NARON
NOGAU
HEI//OM

[76 cont.]

113

South African Journal of Science, Vol. 25, 1928.

J. Moir, J.S.A., Chemical Institute, VII, 1924, p. 28.

J. Moir and J. Lewis, J.S.A., Chemical Institute, VIII, 1925, p. 11.

H. H. Curson, Some Little-known South African Poisonous Plants and their Effects in Stock. Thesis for Diploma of F.R.C.V.S., 1926.

●278 lives on the roots of an acacia. The Bushman carries several of these cocoons around with him, like cartridges, in an antelope horn. If the arrow tip is to be poisoned, a fire is made, some of the acacia resin that the Bushman always carries is smeared on the arrow tip, and then a cocoon is broken and its contents rubbed on the tip. On one occasion one of my Bushmen had overlooked a small wound on his thumb, through which the poison penetrated into his blood stream. The penetration of the poison was not very painful; he merely had a feeling "as though warm water was penetrating into his flesh." The arm was considerably [752] swollen for a week. The others made numerous incisions and scarifications with glowing sticks on him in order to save him. [262] The flesh of the animal killed in this way is eaten raw, poisonous.

278 Von François (2) reports that the Hei//om of this region

[113]

2. Von François, "Reiseberichte Windhuk-Gobabis [Travel Report, Windhoek-Gobabis]," Mitteilungen aus den deutschen Schutzgebieten, V., 1892.

prepare their poison from the milky sap of the Apocynacea adenium Boehmianum. When exposed to the sun, it first becomes violet and then black. It is kept in little leather sacks and in case of need is warmed and mixed with the sap of the Habas root and applied to the arrow tips with flat sticks. These Bushmen still [411] used grooved stones to direct the arrow shaft.

/258 cont./

000 which is used for carrying game over the shoulder.

411 Still to be mentioned are the weapons of the Bushmen. These are limited essentially to the bow and arrow. The bow consists of firm, flexible wood which tapers toward the ends.

[283] The bowstring is made by twisting together separated strands of gemsbok tendons.

The arrows have a very peculiar construction. The shaft is a piece of reed approximately 60 centimeters long, which is feathered at the lower end. A piece of eland bone, approximately 15 centimeters long, which has been sharpened to a point on both sides and carefully rounded by filing on stones, is inserted at the upper end of the shaft in such a manner that it can easily be taken out and reversed. The front end of the reed shaft, which is designed for the insertion of the bone arrowhead, /259/ is wrapped with bast in order to give it the necessary resistance. The two ends of the arrowhead are treated differently. The shorter and blunter tip is left free of poison and serves solely for hunting purposes. The

● 278 longer and more pointed end is covered with a brown, resin-like poisonous mass. It is very difficult to obtain any definite information from the Bushmen concerning the origin of this poison. They shyly evade questions about it.

I was able to ascertain only one fact, namely, that it is obtained by making incisions in the bark of a tree called chi (Herero: otjindombo). The arrowhead is dipped in the sap of the bark and

411 heated over the fire.

In addition to the bow and arrow, one also finds simple, unworked kirris, and -- at least among the Bushmen of the Kaukau Veld -- throwing spears with iron points that are obtained from the Ovambo in trade.

Arrow shafts and arrowheads are carried on the back in separate leather quivers.

They also use simple, feathered wooden arrows with pointed ends for fowl.

342 The dwellings are as simple as the whole way of life of the Bushmen. The huts are only a little taller than a man and about three meters in diameter; they are set up by embedding sticks in the ground. These poles, which form the framework, are joined in the center, making a dome shape, and the interstices

X137 *triloba* they are what is known as dorsifixed, that is they are fixed a little way up from the base so that the stipule is free at both ends. The flowers are the same size in the two species and have the same long stalk, but those of *Vigna triloba* are predominantly purple. They tend to open in the early morning and to close during the heat of the day.

Vigna triloba is reported from a variety of soils and is widespread through southern Africa, but it was not seen on the expedition until the Nama Pan area was reached.

262 It has a finger-thick tap-root which is edible after boiling or roasting,
[252] although fibrous and slightly bitter. In mature plants it may extend downwards further than can conveniently be dug, but it is easily broken off. There appear to have been no previous records of its use as a food plant.

X137 *Commiphora pyracanthoides* Engl. (5137) Photograph 23.

Eastern !khũ Bushman n|ñə

A deciduous, rigid, twiggy two-foot shrub with spine-tipped twigs, branches that curve downwards, and a bark that is pale green and flaky on the older parts and grayish on the young twigs. The flowers are less than a quarter of an inch long and inconspicuous, and are borne in bunches on small knobs scattered along the twigs. Male and female flowers are on separate plants. The knobs also bear the leaves, which appear after the flowers and are glaucous, simple and finely serrate, and about three quarters of an inch long and half an inch wide. The fruits are "ovoid, about the size of a green pea, though reddish brown when ripe. When the fruits are ripe, the fleshy covering may be easily split apart in two halves exposing the black seed with a red aril covering it partly at the base and extending in four slender 'fingers', producing an intriguing pattern". (Codd, 1951:87.)

The species extends from South West Africa to the northern Transvaal, but was uncommon in the area round Nama Pan. One specimen collected there was grown in Pretoria. Leaves and flowers were obtained in the summer following, and from this material the determination was made possible.

[262] The plant exudes an edible gum from injuries and is a useful source
312 of water in an emergency, the water being in a sappy underground organ
824 which is like that of one of the following species of Commiphora, No. 4994. It is known as a water plant among the Bantu of the Transvaal as well.

X137 *Commiphora* spp. (4994 edible, 5030 inedible).

4994		5030	
!hɔ: Bushman..	dʒã	|gikwe Bushman	!ana
|gikwe Bushman	dʒã		
Naron Bushman	|uri		

Two species of Commiphora were collected in the Kalahari south of Ghanzi. They were completely deciduous rigid two-foot shrubs with many sharply-tipped twigs and a flaky bark. At first sight they were identical, and even close examination revealed no bigger difference than that one of them was a little more of a thicket than the other and slightly
8.24 grayer. The Bushmen, however, stated emphatically that the grayish one
[278] was poisonous and the other not. They said also that the grayish one WAS THE HOST OF THE INSECT WHICH THEY USE FOR
[825] MAKING THEIR ARROW POISON, AND THAT IT HAD HARDER ROOTS THAN THE OTHER.

7:Story N-5 (1955) 1958 FX10 Bushmen FX10

was the host of the insect which they use for making their arrow poison, and that it had harder roots than the other. The fruits, flowers and leaves might have shown the difference clearly, but no trace of them could be found, and though plants were sent to the Transvaal for growing they failed to become established.

In spite of its unpromising appearance, the non-poisonous one is a useful source of water. This is in a sappy unbranched vertical underground part about an inch and a half thick. The Bushmen excavate down its length as deeply as they can reach, then break it off and withdraw it. They remove the thin outer skin and chew the remaining part, which is crisp and has a little tasteless sap. As a source of water it does not compare with the various species of Cucurbitaceae—weight for weight it contains far less, and the labour of digging it up is considerable. However, it must be a reliable standby when the Cucurbitaceae are not in fruit, and in the central Kalahari it is plentiful. In the southern part it is apparently absent, for it was not seen until 256 miles north-west of Molepolole.

Dichapetalum cymosum (Hook.) Engl. 5109, 5266, 5338 Photograph 24.

Eastern !khũ Bushman ma-!

This plant produces a number of slender erect woody stems up to 12 inches high, sparingly branched and often buried in the sand at the base. The leaves are four inches long, numerous, sessile, alternate, broader in the upper half where they are about one and a half inches across, and tapering at the base, with a stiff papery texture and with veins prominent above and below. They have a slight bloom on the upper surface and the younger leaves at least have a pair of narrow hairy stipules at the base. The younger parts of the plant are hairy, but the hairs wear off with age, and during the winter the leaves turn brown and hard and finally drop. The flowers are scented and have white petals forked at the end, but as they are small and nearly covered by the sepals, they are not conspicuous. The fruits are like a loquat, and may be brown or yellow. The have one or two big seeds covered by a little flesh.

Dichapetalum is distributed widely but patchily from the northern Transvaal through to Angola and Rhodesia. On the expedition it was seen for the first time between Tsau and Kaikai, and beyond that it was fairly frequent but scattered. It was usually in open situations, and seldom where there was dense tree growth.

Though the leaves are extremely poisonous, the flesh of the fruits is harmless and is eaten by the Bushmen. They emphasised that the flesh only could be used, and that the stone was poisonous. They did not mention the skin, but the following note on Schoenfelder's specimen 31, in the National Herbarium, indicates that it, too, is poisonous:—

> "Fruits like small yellow oranges are eaten peeled in great quantities by the Kung Bushmen. When still green can be eaten after baking in hot ash. Used like fruit, fresh. The peel of the fruit is stamped and mixed with other food to poison stealing dogs (Diriko)."

Marloth (1913-25: II: I: 120) and Engler (1912: 577) also refer to the edibility of the fruits.

There are four other plants of very similar appearance which could be confused with *Dichapetalum cymosum*, and although they were not collected on the expedition, their distribution does overlap. They are *Pachystigma pygmaeum*, *Pygmaeothamnus zeyheri*, *Parinari capense* and *Diospyros chamaethamnus*. The first two bear inedible fruits and may be

are indicated by the *gei-khois*. On the return of the women 222
to the *||gãus* they deposit the bags containing the fruit in front of the hut of the *gei-khoib*. The *gei-khois* then fills four or five basins by taking a little from the bag of each woman and places them under the */heis*. Her husband now kindles the */hei|ais* and, after having applied *‡norab* and *dabas* to appease the fire for a plentiful harvest, takes a handful or two of the fruit and eats it. The fruit is now free and both men and women may eat it. There is no name for this ceremony, but the first fruit is called */gaugei-|un*.

Among insects, locusts, ants, scorpions, young bees and 262
honey are greatly relished. Frogs, lizards, snakes, etc., are also eaten. In fact, all living animals are eaten with the exception of the mole and the hyena, the former because its winter larder of õintjes forms a valuable and easily obtainable addition to the supplies of the Bushmen and the latter because it eats human corpses.

The methods used in the pursuit of game vary according 221
to the season, the year being divided into a cold, dry season 224
(winter), a hot, dry season (spring and early summer), a small, rainy season (September and October) and a big, rainy season (January to April). Snaring is resorted to only during the dry season in the case of such animals as guineafowl, bustard, aardvark, ostrich and small game. Pitfalls are not made use of except for hare and springhare as too much work is entailed in making them. Springhare and snakes are also caught by means of a long barbed stick which is passed into the burrows, the animal being transfixed and then dug out. During the big rainy season when the ground is sodden with moisture small buck such as duiker and stembuck are run down on foot and killed with a knob kirri. This method is not applicable to small game during the dry season owing to the difficulty in following the spoor. In the hot weather, however, young buck are easily caught in this manner as the hot sand causes the hoofs to come off. The gemsbuck does not tire easily. It is run down, therefore, only during the big rainy season when the soft ground impedes its progress and causes it to be caught comparatively easily. All other varieties of big game are run down in the hot, dry season. After a herd of game has been located one or more men give chase at a steady trot. The animal is pursued relentlessly until it is exhausted and brought at bay, when it is killed with assegaai.

Bow and poisoned arrows are used all the year round. These 184
weapons differ considerably in character in various localities. 411
The Kalahari bow is small compared with that used by the *!Kũng* of the Oschimpoloveld, and *Hei-||om* of the Etosha Pan region; the arrow consists of a reed shaft, bone foreshaft and bone or iron tip, whereas the latter use arrows with feathered wooden shafts and iron tips only. The poison also 184
varies in different localities. In southern Namaqualand it 276
is constituted of a mixture of plant juice (euphorbia), snake poison, scorpions and spiders; in the southern and central

184 Kalahari only insect poison is used, and further north and
278 north-west only plant poison.

224 All tribes observe certain customary practices in connection
[84] with the hunting of animals with bow and arrow. These vary considerably among the different tribes. The following is an account of the practice as met with among the *Hei-||om*. After an animal has been shot it is followed by the hunter until it expires or until nightfall when he returns to the *||gāus* (camp). The following morning the whole community takes part in the search for the carcass, as the previous day's tracks had in all probability been effaced during the night by other animals. The searchers spread out on a wide front and keep a very sharp lookout for the presence of vultures. After the carcass has been found it is skinned by the men.

252 The belly is then opened and the entrails removed and cleaned. Bags are made from the stomach and into these the blood is collected. The animal is next cut up and, after this has been done, the liver is roasted and eaten by the men. The skin, if suitable for the purpose, is cut into
[237] sandals, bowstrings, etc., on the spot. The meat is then removed to the *||gāus* by the men who may occasionally be assisted by the women. On arrival at the *||gāus* all the meat is laid on the ground under the *!heis* either on sticks which were used in carrying it or on branches. The *gei-khoib*
224 (chief) now comes forward and if he finds that the *!hei-|ais*
622 (fire under the tree) has gone out he returns to his hut, brings
252 fire and wood and re-lights it. If he is absent when the meat is brought in he is immediately sent for, the meat in the meantime being hung on the *!heis* (tree in centre of camp). After having kindled the fire the *gei-khoib* instructs one of the men—the one who has shot the animal is excluded from doing any work—to open the bones and collect the marrow. The blood and the marrow are placed on the fire in separate pots and at the same time some of the meat for the men is also cooked. As soon as the latter is ready for eating the *gei-khoib* removes a piece from the pot and "tastes" (tsŭ-tsŭ) it. This is done by holding it between the teeth and fingers and cutting off and eating a morsel or two. The meat is now safe for the members of his group to eat. The cooked meat is then pounded with a stone, teased between the fingers and thrown into the pot containing the blood. The melted marrow is next stirred into the mixture of blood and meat. The resulting dish is known as *≠koms*.

224 All meat killed with bow and arrow is *so.ra* and may not
262 be partaken of until it has been tasted by the *gei-khoib*. The liver, however, is eaten by the men immediately after the animal has been cut up and is thus excluded from the scope of the *so.ra* as far as men are concerned, but to the women it is *so.ra*. All parts of the animal are eaten, but certain categories of people may eat only certain prescribed portions of the animal, the rest of the meat being *so.ra* to them. For example, the wife of the man who killed the animal is entitled to the superficial covering of meat and fat of the

8: Fourie D-5 (ca. 1920) 1928
FX10 Bushmen FX10

animals is either cooked or roasted. Among the tame partly disorganised groups any sort of receptacle such as a paraffin tin serves for cooking purposes. The more primitive groups use clay pots bartered from the neighbouring Bantu. Roasted plant food is eaten whole or in the form of soup or porridge after being pounded up in a wooden mortar or on a stone and mixed with boiled blood.

Food is eaten direct from the pot or from bowls made of wood or the hide of big game. Many groups nowadays make wooden spoons. Generally, however, either the hands or tortoise-shell spoons are used in eating.

Every part of an animal is eaten or made use of for some purpose or another. Nothing is allowed to go to waste except by those groups which, through possessing dogs, find it comparatively easy to kill game. The camps of the latter are generally littered with bones, etc., whereas among the wild Bushmen even the bones are broken up and eaten. In the case of small antelope when for any reason the skin is not suitable for other purposes it is roasted with the animal and eaten. Small skins are used for karosses, food and tobacco pouches, quivers, loincloths, etc. From the skins of big game on the other hand sandals, blankets and, among certain groups, bows, quivers and bowstrings, are made. The */Nu-//ĕin* and *//Aikwe* are more expert in preparing skins than the *ǂAo-//ĕin* and other tribes living to the north. Articles made by the former form an important medium of exchange. The sinew is used for making bowstrings, for reinforcing bows and arrow-shafts, and as thread for sewing skins. From it also is made the string of the nets in which the Kalahari groups carry their belongings. In the Kalahari the foreshaft and tips of arrows are made from the long bones of the ostrich and various kinds of big game. Bones are also made into knives, awls, pipes, etc. The horns are manufactured into spoons, whistles, small quivers for carrying arrow-tips during the rainy season, implements for stripping the fibre required for snares, artificial leeches, etc. The stomach of large animals when not required for food is fashioned into bags for collecting the blood and for carrying water. Ostrich eggshells are used for carrying and storing water and for the manufacture of the eggshell beads which at the present time form the most important article of barter among the */Nu-//ĕin, Kaukau* Bushmen and *Hei-//om*. Among the most northerly groups on the other hand arrow poison and red ochre, obtained from the wood of the *omura* tree, are the principal media of exchange.

Religion.

The purpose and scope of the present report do not permit me to deal at length with the multitudinous magico-religious beliefs and practices with which the lives of all these primitive communities are surrounded.

The Bushmen are one of the most primitive peoples living 105
on earth. Although most of their groups own some metal ob-
jects, Bushmen do not smelt or forge metal, but get it in trade 325
from their Bantu neighbors. They use soft metal in the mak- 439
ing of a few tools such as knives, arrowheads, and little axes,
cold-hammering the metal into shape themselves. Bushmen
make the other tools they use from wood and bone, grass and
fiber, the things of the veld. They dig roots and pick berries [222]
to eat because they have no crops. The desert is too dry for
anything but desert plants to grow naturally, and Bushmen,
who quickly consume all the wild food available in one place,
cannot stay anywhere long enough to tend crops or wait for
them to grow.

There is not enough water to water livestock, and for this [233]
reason Bushmen have no domestic animals. Most of their
groups do not even have dogs. Instead of herding, Bushmen
hunt wild antelope with tiny arrows, sometimes made of soft, [224
traded metal, sometimes made of bone, and poisoned with a 278]
terrible poison extracted from a certain grub, a poison which
affects the nervous system of a creature and which is so deadly
that an antelope shot early in the morning with a single arrow
well placed in the body dies within the day. Hunting is very
difficult, for travel in the veld is thirsty and rigorous and the
antelope are clever, but as often as not the Bushmen hunters
shoot one and then they use it all. Most of the meat is dried [251]
to preserve it, causing it to last at least a few weeks, but
sooner or later every last bite of it is eaten, even the mucous
lining of the nostrils and the gristle inside the ears. They [262]
sometimes eat the hide, sometimes work it into leather to
use for clothing, and if the antelope bones are not all [281]
cracked for the marrow, pieces are worked into arrow points
to shoot another antelope.

In order to live as they do, Bushmen must travel through 105
361

9: Thomas T-5 (1951-1955)1959
FX10 Bushmen FX10
Kung
GiKwe

turned the arrow over and over, sighting down its length to see if it was straight. It was.

Gai then surprised us somewhat by taking from his hunting-bag twelve round nut-like tiny shells which we recognized as the cocoons or pupa cases of the poison grubs, the source of poison for the Bushmen's deadly little arrows. Gai said he would poison his arrow, a process which he seemed to find more interesting than making it, and we said we would be very glad to see. We wondered where he had got the grubs, for he and Ukwane had both told us that there were no poison grubs anywhere near Ai a ha'o, and he said he had received them from the people whom we had met in the Okwa Omaramba, as they had plenty there.

We regretted very much that we had never seen a tree or shrub that houses the poison grubs of the Gikwe, and that we had never been able to catch one of the adults of the beetle that in its pupa stage is poisonous. Gai said that his grubs came from between the roots of a bush, called in Gikwe simply a poison bush. We do not know if the grubs are the same as the grubs used by Kung Bushmen, which live among the roots of a tree, called by the Kung a poison tree, called by us marula kaffra. The grubs of the Kung are from the beetle *diamphidia simplex*, which lays its eggs on the leaves of the tree. Once, all in one afternoon at a single tree of Kung Bushmen, I was shown by a young hunter the yellow eggs on a leaf, the young larvae just hatched, which the hunter said crawl down the tree under the bark to pupate in the earth among the roots, and the pupae of this beetle.

It has always amazed me that the Bushmen ever discovered these beetles, which are only one species among thousands in South Africa, and which the Bushmen say are poisonous only in their pupa stage. The pupae themselves are

9: Thomas T-5 (1951-1955)1959
FX10 Bushmen FX10
Kung
Gikwe

enclosed in the tiny brown pupa casings with brittle shells like eggshells, exactly the color of the earth around them, and are found only among the roots of certain trees and bushes. Nothing edible grows among the roots, and although the marula kaffra has edible nuts that drop and are gathered from the surface of the ground, there would be no likely reason for Bushmen to be digging there. Bushmen do eat certain beetles, certain ants, and certain caterpillars, which, they say, are sweet as honey, but even if a Bushman were to eat a poison beetle he would not die (unless he had a cracked lip or an ulcer) because the poison works only in the blood stream, and even the black meat of an antelope taken from the site of the arrow wound can be eaten with impunity.

Only people who pay the closest attention to every tiny object and who investigate all its possibilities could ever have discovered a thing like this.

I not only do not know if the beetles used by the Kung are the same kind as those used by the Gikwe; I also do not know if the Kung use only one kind, for I have seen Kung Bushmen take two kinds of pupa from the roots of the same tree, from cocoons that appeared to be exactly alike. Even the Kung do not know, when they see a cocoon, which kind it is. One kind of pupa is small and pure yellow with a black head, a thorax, an abdomen, and six small legs. The other kind is larger, fatter, and orange, with no noticeable body sections such as thorax and abdomen, but more like a caterpillar, the same all the way down. The yellow pupae, the Bushmen say, are males, with sacks of poison only under their front legs. To get the poison Bushmen pull off a leg and squeeze out a single drop, discarding the rest of the body. The orange pupae are said to be females, with poison throughout the entire body. To get poison from these, Bushmen tap the grub all over to

9: Thomas T-5 (1951-1955)1959
FX10 Bushmen FX10
GiKwe
Kung

825 mash the insides, then pull off the head and squeeze the in-
278 sides out like toothpaste from a tube. Both kinds of poison are equally good, they say.

Perhaps the two types of pupae are the pupae of two different kinds of beetles. Perhaps they are from the same beetle but in different stages of development. Perhaps they really are males and females, as Bushmen are often scientifically
[821] accurate, but, as Bushmen also have male and female rain clouds, perhaps not.

[439] Kung Bushmen, who use metal arrows obtained by trading
824 animal skins for wire with the Bantus, have a complicated
825 system of poisoning in which they use several ingredients for
278 the poison paste. One of these is a binding fluid, used because the pure poison squeezed from the grub will not adhere well to metal but must be made binding and sticky. The binding material comes from the bark of a tree. They chew
[415] the bark thoroughly and spit the mash into a little mortar
237] made from the knee bone of an antelope, a nice little cup, into which the Bushmen have squeezed the milky juice of sansevieria plants, got by wringing the heavy, thick leaves. This juice has an irritating effect when it is dissolved in a wound and causes the antelope to rub and scratch its wounded spot against a tree, which stimulates circulation in the area, which carries the poison more quickly through the body, which hastens death.

The paste in the mortar is thoroughly mixed, then smeared with a straw on the foreshaft of arrows, never on the head, for if the sharp edges of the head were poisoned any child might accidentally nick himself and die. When the arrow is poisoned it is propped up by a fire and the poison is allowed to dry into a shiny dark paste, to be melted again by the
441 moisture and warmth of an antelope's flank.
825
278 Gai had stored his poison cocoons in a tiny bag inside his

9: Thomas T-5 (1951-1955)1959
FX10 Bushmen FX10
GiKwe

hunting-bag, and when he came to poison his arrow he took them all out and felt them, shook them, to see if they were fresh. Then he took his arrow, his cocoons, and a scrap of leather he had been saving which was so thin and ragged it had very little use, and, moving all these things to a place in the grass far away from the werf, he sat down to work. He did not work in the werf because a drop of poison might be spilled and months later would still be dangerous.

Gai first spread out his rag as a work table and arranged his cocoons upon it. Then he called Witabe, who was watching from the werf, and asked for a fire, which Witabe brought in the form of a few sticks in one hand and a live coal from one of the werf fires in the bare palm of his other hand.

At last Gai was ready and his fire burning. After inspecting his fingers carefully for cracks in the skin and telling us to sit upwind from him so that no drops of poison would blow on us, he scratched open one of the cocoons. The shell was as brittle as a little seed pod. It opened easily and Gai fished inside carefully with a straw, dragging out the grub, which struggled feebly with one slight, almost imperceptible convulsion and then lay alive but motionless, curled in a U on the palm of Gai's hand. The cocoon was small and the grub must have filled it entirely, for, once outside, the grub seemed twice as large as its casing. It was a yellow one, like the kind the Kung call males, but I cannot say for certain that it was exactly the same.

Gai laid it across his thumbnail and tapped it gently, mixing the insides. Then he twisted off the head, squeezed the body, forced the paste inside onto the shaft of his arrow, and smeared it evenly with his straw. Gikwe Bushmen do not have to use a binding fluid, for their bone arrows hold the poison very well.

After the foreshaft was coated evenly all around with the

9: Thomas T-5 (1951-1955)1959
FX10 Bushmen FX10
Kung
GiKwe

poison of several grubs, Gai dried the arrow by the fire, then coated the foreshaft again. In all, he used ten grubs, all that he had except two which were found to be shriveled and dead. The last coating he did not smear; pulling off the grub's head, he dotted the arrow with little spots of poison. He did not poison the arrowhead but only the foreshaft.

When the arrow was finished and the poison dried to lacquer on the shaft, Gai carefully collected all the cocoons and all the grub skins and burned them in the fire, keeping out of the smoke. He then called for a fresh tsama melon, which Witabe brought him and which he used to wash his hands. At last he put his arrow in his quiver and lit his pipe. He was through.

While we were there with the camera set up and loaded we asked Gai to demonstrate for us the way he would shoot a bow, which he did, and we were surprised to see that the Gikwe, who use bows of the same size and shape and arrows of the same size as the Kung's, have a different arrow release. The Kung grip the arrow between the thumb and the side of the forefinger as they draw back on the string, but Gai gripped it between the first two fingers, holding his thumb back. He said that all other Gikwe do the same.

Ukane called to us from the werf and said that since we were here he would show us how a Gikwe Bushman makes a string. We went over to him, and he did make a string for us by pulling the tough fibers out of aloes and rolling them together on his thigh, leaving just enough fiber unwound at the end to splice with the next rolled section. The string was so strong that when he jerked it between his hands it neither broke nor raveled. It took him only a few minutes to make it, and he said that when he had many such strings he would tie them together to make himself a net.

As he worked, for the sake of efficiency, he held the fibers

than to be squatting around the edges of the pans, making little guises with sticks and string into which guinea fowl invariably fall.

The technology of hunting is the most complex in !Kung culture, and the most involved aspect of that technology is their amazing poison. Without it, the little unfeathered arrows, driven by a light bow, would be useless against big game. With the poison, a !Kung hunter could kill an elephant although, perhaps fortunately, for both, the two seldom encounter one another.

THERE are four kinds of poison—a root (which is rarely used), two grubs and the pod of a tree. One of the two kinds of grub is the larva of an unidentified beetle that lives in a bush; the other is the larva of a beetle that lives in certain Murula trees, identified as *Diamphidia sim-*

11:Marshall E-5 (1950-1955) 1958
FX10 Bushmen FX10
Kung

224
278
825

plex. This identity, however, is complicated by the presence of still a third beetle, a parasitic one that apparently lives on the grubs of *Diamphidia simplex*, so that it is not now clear *which* is the poisonous grub. The Bushmen are aware of the parasite and feel that its grub does contain poison. They say it "runs around and runs away." They may be speaking of the beetle, for it is difficult to imagine a grub running, and the grub may be so similar to the young *Diamphidia* that the !Kung simply confuse the two. Lastly, still a fourth insect—smaller, and hairy—said to become easily inflamed, is occasionally encountered among the grubs. It is possible that this is the insect that has a poisonous larva: in any case, somewhere in the community is a poisonous grub, and how the Bushmen found it we have no idea.

Assuming *Diamphidia* to be the

11: Marshall E-5 (1950-1955) 1958 FX10 Bushmen FX10
Kung

415
482
312

BAGS FOR FOOD, *above*, like eggshells for water, give !Kung some freedom in moving. Food may be brought to water or water carried far into the desert.

224
278
825

poison-bearer, its cycle is somewhat as follows: the beetle lays its eggs in the Murula tree leaves. Hatching in the rains, the grubs migrate down the trunk, progressing through a number of growth stages. Finally, they make their cocoons under the ground near the tree. In these cocoons, they struggle through metamorphosis and emerge as small, bravely-colored beetles in the New Year's rains, providing the Bushmen have not already dug them up. The hunters know the particular trees frequented by the beetles and make expeditions to them at least twice a year to replenish their supply. Then the grubs are dug up, and used on the spot or kept in their cocoons, depending on the man's needs.

224
278
411

The poisoning of !Kung arrows is a long process, with a number of variations. The most common poison is a mixture of the grub and the previously mentioned tree-pod. The grubs are crushed and the pod is warmed until its contents melt slightly and can be crushed with the grubs. This mixture is thinned with the copious spit which results from chewing any of a variety of barks and is then smeared on the foreshaft of the arrow—but cleaned immaculately off

[p. 53]

224
278
411

the point, for the slightest prick, the least bit of poison getting in such a wound, would cause death.

278
224
[752]

Depending on where the poisoned arrow hits, a small buck can die in a morning, a man in a few hours, a giraffe in four to five days. There is nothing that can be done for a man, short of amputating a limb or immediately excising the wound and cutting the nearby flesh to let the blood drain. Yet, the poison has no effect upon the game's meat. One can even eat the mixture with relative impunity: it must enter the bloodstream directly to be deadly.

224
262

As subsistence activities, the men's and women's roles—hunting and gathering—are of unequal weight. Almost eighty per cent of the people's food is *veldkos*, more abundant than game in *Nyae Nyae*, and far more easily acquired. If from one summer to the next, a man kills twelve antelope, he feels he has had a good year.

224
182

But, despite its relatively minor subsistence value, hunting is extremely important in !Kung culture. It has developed its body of technology, acquired a large tradition of beliefs, fostered a wealth of knowledge, and

411
278

POISON IS SMEARED on arrow's metal foreshaft, but carefully cleaned away from point. Commonest poison is made of tree pods mashed with beetle grubs.

[p. 62]

13: Marshall E-5 (1952-1955) 1962 FX10 Bushmen FX10
Kung

821 them or seek to gain beneficent influence from them. As far as we know they do not pray to them for food as the Cape Bushmen are said once to have done, or for rain as the Naron and Auen and /O /Kung do.[1]

The /Kung beliefs about rain, which I do not describe in detail in this paper, include the idea that rain is life-giving and makes the food plants and other vegetation grow, whereas the sun is death-giving. The /Kung do not now formally personify or deify rain or worship it, but may retain a vestige of an ancient personification of rain in praying to it, in a manner of speaking, as they also do to lightning. 'Fall silently, rain. Do not make such a noise. Do not be dangerous', they say. Or, to lightning, 'Do not come against me. Go to the other side.'

825 The /Kung do not attribute divinity to the mantis but, in calling it 'the servant of *//Gauwa*', perhaps they preserve a vestige or an echo of the Cape Bushman belief in */kaggen*. If they injure a mantis which is walking on them or throw one into the fire, [753] '*//Gauwa* would see this and say that his servant was being ill treated and would punish the person. He would make the person sick'. Mantises are *chi dole* (*chi*, thing; *dole*, bad) not because they harm you—they only prick and tickle you—but because they belong to *//Gauwa* and people are afraid of the 'owner'. The old people told them these things. We saw the /Kung hold mantises, however, without exhibiting fear or the uncanny fascinated feeling I had when I watched them (especially the huge female who lived with me, with her consort seemingly permanently attached to her, and fascinated me by never seeming to take her eyes off me as she made her slow and stately progress around the tent at night).

The /Kung react in quite a different way to millepedes. They say there are two kinds. The large one they call *ko ko chi nahe*; the small one they call *choba* or *zoba*. One day a boy picked up a millepede and threw it toward a group of women. They jumped up and fled, shrieking. Talking about it afterwards, they explained that 'even men are afraid of millepedes'. (We observed several incidents of people jumping and running from them.) [753] They are very dangerous, the /Kung say. If one gets on you, the shock of fright you feel could kill you. 'Millepedes work with *//Gauwa*. He sends them to eat your nose when you are asleep.' If you put a *choba* in the fire when the *n/i* berries (*Grewia flava* D.C.) are still green, the berries will not ripen ● [278] properly and will not be sweet. If the /Kung find the ash of a millepede which has been burned in a veld fire and has kept its shape, they take the ash for a medicine. (Cf. Schapera's account that among the Naron and Auen 'the millipede, said to belong to *Hishe*, is only touched by them [magicians]; they dry it and use it powdered as medicine.'[2])

774 825 The /Kung do not believe that animals have spirits or souls or that earthly objects (such as trees or water, for example) are entered by spirits or are themselves animated by having spirits of their own.

787 Divination is a secular practice among the /Kung. The oracle disks may be thrown and read by any man. They are five leather disks about two-and-a-half to three inches in diameter. The man who throws them gathers them into his cupped hands, flings them with a spreading motion on to a kaross on the ground, and reads what they reveal or predict. Different personifications are attributed to the disks, according to what the people want to learn from them. If advice about a hunt is wanted, the

[1] Schapera, op. cit., pp. 176–7. [2] Ibid., p. 197.

161. STANFORD, W.E.
Statement of Silayi with reference to his life among the Bushmen, Trans. Roy. Soc. S.Afr. 6: 435-440. 1910. 113
(Silayi, a Tembu, lived with Bushmen for three years).

162. STIGAND, A.G.
Notes on N'Gamiland.
Trans. Roy. Soc. S.Afr. 3: 379-391. 1913. [278] [101]
p. 386-388 Details method of making poison by Masarwa. Mentions swamp or river Bushmen.

163. STOW, George W.
Account of an interview with tribe of Bushmans in South Africa.
Jour. Brit. Anthr. Inst. 3: 244-247. June, 1873.
(In the Langeberg mountains).

164. STOW, George W.
The native races of South Africa: a history of the intrusion of the Hottentots and Bantu into the hunting grounds of the Bushmen, the aborigines of the country. ed. by G.M. Theal. London, 1905. 618 p. illus. map.

165. TAGART, E.S.B.
Report on the conditions existing among the Masarwa in the Bamangwato Reserve of the Bechuanaland Protectorate and certain other matters appertaining to the natives living therein and memorandum thereon by the administration of the territory. Pretoria, 1933. 24 p.
Reprinted from the official gazette of the High Commissioner for S.A. v. 122, no. 1662, May 12th, 1933. 24 p.
(Deals with the "Masarwa" employed by the Bamangwato).

166. THOMAS, Elizabeth Marshall
The harmless people. London, 1959. 266 p. illus.

167. TINDALL, Henry
Two lectures on Great Namaqualand and its inhabitants delivered before the Mechanics Institute, Cape Town. Cape Town, 1856. 47 p.
Bushmen. p. 20-25-32.

168. TOBIAS, Phillip V.
Bushmen of the Kalahari. illus. map.
Man. 58 (36): 33-40. 1957.

169. TOBIAS, Phillip V.
Bushmen of the Kalahari.
World Digest 37(221): 93-94.
(Condensation of article in Man. Roy. Anth. Inst. London).

136 Order Coleoptera

Blister beetles 2 spp.

Click beetles 6 spp.

Dung beetle 3 spp.

Poisonous beetles 2 spp.

Other beetles 2 spp.

136 262 Insects do not play an important role in the diet. One species of antlion (determination pending) had an annual outbreak around the end of November. Tens of thousands pupate within a 36 hour period and the Bushmen eat them by the hundreds. In 1963, the outbreak occurred on November, 24, in 1964, on December 3.

Three different species of click beetle were eaten in March, 1964. These were considered a delicacy rather than a staple. The Bushmen said that certain grasshoppers and caterpillars were edible but they were not observed to eat them.

262 237 Honey is considered by all authors to be a major Bushman food (Bodenheimer 1951). It is curious therefore that it was rarely observed to be collected or eaten.

136 278 By far the most important insects for subsistence are the two[1] species of beetle used by the Bushmen for poisoning

---

[1]Possibly as many as eight species of poison grub are used by the !Kung Bushmen! Koch (1958) collected five new species that the !Kung said were used for poisoning arrows. (See Shaw et al., 1963).

136
278 arrows: Diamphidia nigro-ornata and Polycada flexuosa. These are described in Chapter VI.

Climate

132
[133] The Kalahari Desert has a mean elevation of 3,000 feet above sea level and lies within the summer rainfall area of Southern Africa. These factors contribute to a climatic regime that is characterized by hot summers with a three to four month rainy season, and by moderate to cool winters without rainfall.

132
805 Five seasons may be distinguished in the Dobe area. Most Bushmen recognize five (although some divide the year into eight or more seasons) and their scheme will be followed here.

Seasons

1. !huma (spring rains) -- The Bushman year begins in October or November with the onset of the first rains. These consist of light convectional thundershowers that often fall on one area and miss other areas entirely. The first rains have the effect of triggering growth and reproduction in the flora and fauna and may overnight transform the landscape from a parched and dry state to one of lush greenery.

2. bara (main summer rains) -- These rains fall from December to March and coincide with the season of plentiful food. There is a wide variation from year to year in the

412 The women possess several other tools which are of subsidiary importance in the food quest:

- wooden mortar and pestle
- wooden spatula for moving ashes
- carved wooden serving spoon
- tortoise shell bowl
- bundle of tail feathers for fanning the cooking fire
- pottery containers of Bantu manufacture
- iron pots and enamel bowls of European manufacture.

415 177 224 411 The mens' hunting kit represents the most evolved sector of Bushmen technology. It includes at least 19 different tools made from seven kinds of raw materials. The primary weapons include:

[177] 1. bow
[278] 2. arrow poison
[231] 3. spear
4. springhare probe
5. knobkerrie(club)
6. iron tipped arrows
7. quiver
8. hunting dogs
9. rope snares

Secondary weapons include:

[312] 10. fire drill
[177] [412] 11. flint and steel fire making kits
[283] 12. digging stick
[177] 13. iron knife
14. iron adze-axe
15. carrying yoke
16. knotted net

Manufacturing and repairing tools include:

[278] [415] 17. poison-making kit; humeral cup, pestle, applicator

18. whet stones of basalt

[283] 19. wild cotton for polishing rope snares

These raw materials are also part of the man's kit:

[283] 1. sinew

2. twine of natural fibers

3. iron fencing wire

[278] 4. supply of poisonous grubs

[237] 5. bone chips for making arrow link shafts

[410] 6. grass stems for arrows

7. wood for bows, poles and spear shafts

224 411 The construction of the hunting arrow will illustrate the complexity of the weaponry. The arrow consists of a mainshaft about 13 inches in length made from the stem of the grass Phragmites communis (Story 1964:94). Into this is inserted a bone linkshaft about two inches long, carved from the humerus or femur of giraffe, kudu, or gemsbok. The linkshaft is joined to the metal arrowhead by a hollow sec-
[177] tion of grass stem one inch in length. The arrow head is commonly made from iron fencing wire. It consists of a stiff length of wire four to five inches long. The tip of the arrow is beaten into a small triangular blade one half inch from base to apex and five-sixteenths of an inch at the base.

224
411 The butt end of the arrow and the two joints are bound by strands of sinew. In some arrows the iron shaft itself is
224 bound with sinew. It is the iron shaft to which the arrow
411 poison is applied. Care is taken to avoid spreading poison
• 278 on the tip of the arrow. The poison is obtained from the pupal forms of the Chrysomelid beetles Diamphidia sp. and
[415] Polyclada sp. The poison is prepared by squeezing the contents of several pupae into a cup made from the proximal end of the humerus of a large antelope such as gemsbok or kudu. The only additions to the poison mixture observed to be used were saliva and the juice or gum of the several species of Acacia. The use of the latter was optional. Often, without further preliminaries, the Bushmen squeezed the contents of the grub directly on to the iron arrow shaft.

[412] The pupae are mixed with a slender wooden pestle into a thin orange paste, which is then applied directly to the iron arrow shaft using a spatulate applicator especially made for this purpose. The poisoned arrow is then allowed to dry near the fire. After a few minutes it is ready for use.

There are undoubtedly regional variations in the preparation of arrow poison. The ethnographic literature lists at least a dozen substances and recipes that are claimed to be used by the !Kung Bushmen in preparing arrow poison (see Shaw et al. 1963, Story 1964:93).

224 The snared animal is not injured. It hangs suspended on the rope and struggles to break free, but if the hunter has tied his knots well he will arrive on his daily inspection to find the snared buck thrashing around the sapling. He then dispatches the buck with a club or spear, repairs the damage to the brush fence, and resets the snare.

At the height of the snaring season each hunter will have three lines in operation. Each line will have 7-9 gaps set with snares. The Dobe camp hunters who had set 20-25 separate snares averaged one small animal per hunter per week throughout the winter. A hunter's success in snaring depends upon his interpretation of game tracks and the patience with which he habituates the animals to crossing his lines where he wants them to. The hunters operate snarelines only in the winter because at other times of the year both the hunters and the quarry are ranging farther into the desert and the men do not remain long enough at one camp to build and maintain the snarelines.

[278] [231] In addition to the snarelines, the hunters carry out a full range of hunting activities including big game hunting with poison arrows, hunting wart-hog with dogs, and probing burrows for springhare, porcupine and antbear.

Table 7 lists all the kills made by the hunters of the Dobe camp during the 28 day period from 6 July to 2 August 1964.

2: Schapera E-4, 5 (no date)1930
FX13 Hottentot
Bushmen FX10

411 is turned into the shaft; for shooting, the head is reversed, so that the rounded end is turned in and the poisoned end projects. In a more complex form based on the same principle, the head consists of two separate pieces of bone connected by a small link shaft or section of reed; the one piece is blunted at the tip, the other pointed and poisoned. Both pieces fit into the hollow of the main shaft of reed, and when the arrow is not required for use the blunted piece forms the projecting end of the head while the poisoned piece is in the shaft, but for shooting the head is reversed. This extremely interesting type [184] seems to be restricted in occurrence to these Bushman tribes, and is obviously directly correlated with the employment of poison as the effective agent of the arrow.

411 The tribes further north, such as the Northern Kung, the Heikum and the !O Kung of Angola, nowadays generally use arrows with 171 feathered wooden shafts and iron points only. These resemble in type the arrows of the neighbouring Bantu peoples, and may have been imitated from them.

All these arrows are rather fragile, and can never seriously wound any animal which they strike. For their effect reliance is placed upon the poisonous mixtures dotted or smeared over their points.[1] Many 278 ingredients of different kinds are used in these mixtures, the more common being the vegetable juices of *Acokanthera venenata*, *Haemanthus toxicarius* (*Amaryllis disticha*), and various species of *Euphorbia*; the venom of the larger poisonous snakes, such as the puffadder (*Bitis arietans*) and the cobra (*Naia haje*); the beetle *Cladocera nigro-ornata*; the "baviaan spinnekop" or trapdoor spider; and the "klip-gift" or "rock poison" (probably a form of 184 arsenic). Not all of these are in use among the Bushmen as a whole. 278 There appears rather to be a fairly definite distribution of the various mixtures, dependent upon the substances available in the different localities; and probably each tribe of Bushmen has its own particular formula, although this cannot be asserted definitely. For general purposes we may distinguish three main types of arrow poison: the Namib Bushmen and those of the north-west districts of the Cape use a purely vegetable poison; the Southern Bushmen generally and some other tribes, such as the Hiechware and the Kung, use a

[1] A comprehensive survey of the earlier literature on the subject is given by Schapera, "Bushman Arrow Poisons," *Bantu Studies*, ii (1925), 199–214. Two more recent papers of importance are: Hall and Whitehead, "A Pharmaco-Bacteriologic Study of African Poisoned Arrows," *J. Infectious Diseases*, xli (1927), 31–69; and Waterston, "The Bushman's Arrow-Poison Beetle," *Natural History Magazine*, ii (1929), 74–89.

2: Schapera E-4, 5 (no date) 1930
FX13 Hottentot
Bushmen FX10

mixture of animal and vegetable poisons, the ingredients most frequently employed being snake poison and amaryllis juice (*Haemanthus toxicarius*); while most of the Kalahari tribes derive their arrow poison from the grub or chrysalis of the *Cladocera* beetle. 278 [184]

The method of preparing the second type of poison is to cut off the head of the snake, extract the poison sacs, dry them and pound them into a dust. This is then placed in a piece of ostrich egg-shell or the breastbone of an ostrich, and the vegetable juice being poured in the mixture is stirred with a piece of bone or stick. It is then boiled until it acquires the requisite degree of consistency, usually that of a thick jelly, brownish-red in colour. Where a purely vegetable substance is used, as in the case of the *Acokanthera* shrub, the method of preparation differs but slightly. The wood of the shrub is pounded into rough powder, which is put into a clay pot and boiled for some time. A lid is kept on, as the fumes are noxious, but the liquid is stirred occasionally. After a while the wood is taken out and the remainder allowed to simmer until it is reduced to a cupful of glutinous liquid. This is then taken to a *Euphorbia* tree, and mixed with the fresh milky sap drawn from its stem. The poison, a brownish substance similar in appearance to beeswax, is now ready for use. It is generally worked up into a lump, which when not wanted immediately is carried about, wrapped up in a bit of skin, in the long bag which every Bushman has. When the poison is required, the lump is heated in a bit of tortoise-shell, and the melted portion either smeared on the arrow-head with a brush of wood or bone, or else, as was the custom with the Cape Bushmen, placed in a "poison stone", a smooth flat pebble with a deep groove down the middle. The part of the arrow to be anointed is pressed down upon this and worked round and round until the poison coating has acquired the proper shape. If possible the poison is never touched with the fingers, and great care is taken that none adheres to the hands or nails during the process.

The insect *Cladocera nigro-ornata* which forms the main ingredient in the arrow poison of the Kalahari Bushmen is a small reddish-brown beetle which in early spring frequents certain bushes (*Commiphora dinteri Engl.*), and hatches its eggs on the branches. The grubs come out in summer, eat the leaves of the bushes and crawl into the sand beneath them, where they form cocoons. "In both these stages they are used as poison, but the cocoon is preferred. It is dried in the sun and can then be kept for some time and is easily [136]

2: Schapera E-4, 5 (no date)1930
FX13 Hottentot
Bushmen FX10

278 transported. When wanted for use, the insect inside is rubbed to powder on a half tortoise-shell, then mixed with the juice obtained either from the spiked cucumber (*Citrullus caffer*) or from the 'hakdoorn' (*Zizyphus mucronata*). They heat the cucumber root in the ashes, knock it on the ground, then wring out the liquid it contains. The bark of the 'hakdoorn' is chewed, and the juice spat into the dish of poison. This juice is clear, bitter, and sticky and adheres to the arrow point, on to which it is dabbed with a flattened stick after being mixed with the poison. The poisonous matter becomes very hard and dry and is apt to fly off into the eyes if the arrow is carelessly handled. Bushmen always warn one of this and say the eyes become much inflamed if even a tiny grain of dried poison gets into them." Any mixture left over is wound round a stick and carried with the arrows in the long bag; presumably it must be heated again if it is to be put on to further arrow-heads.[1]

114 278 There does not appear to be any sort of ceremonial attaching to the process of preparing the poison, nor is the work of doing so the function of any particular person. There are, indeed, one or two hints at something of this kind, but nothing which can be regarded as fully reliable.[2] All our principal authorities state that in general any man who needs poison prepares it for himself when he wants it.[3]

224 278 None of the Bushman poisons is instantaneous in its effect, although as a rule the smaller the animal the quicker the action. Generally the wounded animal runs on as if unhurt, and the hunter follows on its spoor until he finds the dead body; sometimes this is within half an hour, sometimes many hours elapse before the poison proves effective, and often enough it is not till the next day that he can obtain his meat. That the poison is fatal once it gets to the blood, cannot be doubted. Once the arrow pierces the skin of the animal the Bushman has no fear that it may escape him; it may travel perhaps forty or more miles after being wounded, but its progress becomes slower and weaker, until finally it falls down dead.

411 [412] In addition to bows and arrows, the Northern tribes also make use in hunting of throwing-sticks ("knob kirris") and spears. The former is a round-headed stick of hard wood, usually *Acacia*, about two feet in length, and pointed at the lower end to serve also as a digging-stick. It is used for knocking down birds and small mammals,

[1] D. F. Bleek, *Naron*, 14.
[2] These statements are summarized by Schapera, op. cit., 206.
[3] In addition to the references given by Schapera, loc. cit.; cf. Kaufmann, "Die Aua," 147; Fourie, "Customs of the Hei-//om," 14.

2: Schapera E-4, 5 (no date) 1930
FX13 Hottentot
Bushmen FX10

Another method of trapping employed by the Bushmen of the Namib and of the North-West Cape was to poison the water in springs and so kill the game that came to drink there. The water was conducted a few yards from the spring into a specially-prepared pit, into which were thrown branches of the poisonous *Euphorbia*. The branches were kept down with stones, and the juice exuding from them rested like a scum on the water. The spring itself was fenced off or covered over, thus forcing the animals to drink from the pit. Zebras and other members of the equine species were especially susceptible to water poisoned in this way. Alexander states that near the River Keisu in South-West Africa he found the remains of no less than twenty horses lying close to such a poisoned waterhole.[1]

Traps proper as employed by the modern Bushmen are of two kinds. In one a stone or block of wood is placed in such a position that when the animal touches the exposed bait, the suspended weight falls down upon it. The other kind consists in snares (Plate XI), which are widespread among the Northern Bushmen, but do not appear ever to have been used by the Southern tribes. They are of various types, but the general principle is that a supple twig or sapling is bent down by means of a cord attached to a bait and ending in a noose. If the animal stirs the bait, the cord is released, the sapling springs back into the air, and the noose catches the throat or leg of the animal, which is carried up with it. In this way are caught not only birds and small quadrupeds, such as hares, wild cats, and jackals, but even small buck such as the duiker and steenbok, as well as leopards and ostriches. Snaring is resorted to only during the dry season; in the rainy season it must cease owing to the action of the damp on the cord. This is made from the bark fibre of *Sansevieria zeylanica*, which is shredded by means of a pointed stick, then rolled on the thigh into strands, which are twisted together. Thicker and thinner cords are made according to the game to be trapped.[2]

Fishing

This is also practised wherever possible by all the Bushmen; indeed, among the tribes living in the Okavango swamps it is even

[1] Alexander, *Expedition of Discovery into the Interior of Africa*, ii, 223; Paterson, *Four Journeys into the Country of the Hottentots*, 169; Trenk, "Buschleute der Namib," 167. Moffat describes how on one occasion he nearly died as a result of drinking water poisoned in this way (*Missionary Labours in S. Africa*, 155–6).

[2] Schultze, op. cit., 667; Passarge, *Die Buschmänner*, 77; Gentz, "Beiträge zur Kenntnis der südwestafrikanischen Völkerschaften," 199 sq.; D. F. Bleek, *Naron*, 15.

2: Schapera E-4, 5 (no date) 1930
FX13 Hottentot
Bushmen FX10

also the doctors of the community. The millipede, said to belong to *Hishe*, is only touched by them; they dry it and use it powdered as medicine.

Naron magicians (*tsho k'auba* or */nu k'auba*) do not dress or live differently from the rest of the community. "No one would know them apart," says Miss Bleek, "nor do they seem to have much influence to-day." The Auen seem to have many more magicians than the Naron, by whom they are looked up to in magic matters. Here, according to Kaufmann, the magicians, (*tsho k'au*, */nu k'au* or */geixa*) have their skulls shaved clean, and also carry a few ornaments which may not be worn by other people. The magic art in both tribes is learned by apprenticeship. During the month of the puberty ceremony one or two boys are taught their trade by the old magicians. At the next ceremony they return and are taught more; and boys who have been with a magician for many years can when they become older succeed their master.[1]

Magicians among the Kung are of two kinds, and both are called in especially for illness. The */u k'au*, who sucks out the disease from the body of the patient, is "an evil person, who speaks to no one and always looks black"; while the */ue k'au*, according to Vedder, is the ordinary worker in magic and the poison-mixer, and also prepares medicines from herbs and roots by cooking.[2] Lebzelter gives further information about the magicians. Both men and women can be summoned by the "great captain" to exercise this calling. The power they receive from him is greater than that of all the spirits with the exception of */nawa*, and is equal to that of the latter. Magicians are thus "born and not made", to use Lebzelter's expression, but nevertheless it appears that they have to learn the secrets of their calling by apprenticeship. They accompany the old magicians at least once in the search for medicine plants, and are then subjected to a test. The old magicians in the customary manner attempt to cure a sick person by sucking out the "disease poison" ("Krankheitsgift") or the "spirits of disease" from the body of the patient; then they administer all the "disease poison" extracted by them to the initiates. If the latter do not die from this treatment, they have satisfactorily passed the test!

The magicians, apart from being able to cure illnesses by banishing the "spirits of disease" from the body of the patient, also have the

[1] D. F. Bleek, *Naron*, 28; Kaufmann, "Die Auin," 159.
[2] "Grammatik der !kû-Buschmannsprache," 8-9.

2: Schapera E-4, 5 (no date) 1930
FX13 Hottentot
Bushmen FX10

Treatment

is administered by relatives or friends, or in cases of acute and prolonged illness by a magician well versed in medical practices, who is paid for his services. In cases of the latter kind a very common method employed is massage, leading up to the extraction of foreign bodies (" disease-poisons ", " spirits of disease ", etc.) believed to have been introduced into the patient and thus causing his illness. When the " doctor " feels that the foreign body has been brought near enough to the surface by his treatment, he sucks the part affected and then, with a retching sound, triumphantly spits out the object he is supposed to have sucked from the patient's body. Stones, pieces of bark, small bones, etc., are thus extracted from the affected part of the patient, who in consequence is cured ![1] Lebzelter records also that, while the " doctor " is busy performing this cure, the relatives and friends standing round pray to the " supreme being " to make the patient well again; and, as we have seen, the use of prayers in case of severe illness is mentioned by several other writers as well.[2]

More practical forms of treatment are also found, however.[3] Herbs and roots of various kinds are extensively employed as medicines. Sometimes they are burned to ashes which are then rubbed into small cuts made in the patient's body, sometimes they are boiled and given as a decoction. How far they actually do have curative effects is difficult to say, as no special study appears to have been made of their pharmacological properties, nor, save in a few instances, have they even been identified. But Dornan mentions that " for blackwater they use a plant called qilika (*Anacoampseros rhodesica*) by the Matabele; dysentery *Monsonia ovata*, and *Euclea lanceolata*; for various other diseases, *Cannabis sativa*, *Solanum nigrum*, *Lippia asperifolia* (malaria), *Cratalaria burkeana*, *Pterocarpus angolensis*, *Datura stramonium*, *Indigofera senegalensis*, and *Bauhinea reticulata* ".[4] Burns, open sores, headaches, etc., are treated by rubbing medicated ointments on the part affected. Chapman describes another method of treatment undergone by himself. " Having a frightful headache from the heat of the sun, I resort to my usual Bushman remedy, at the expense of having my forehead ornamented with blisters dotted all over it the next morning. April [his Bushman guide] has a root

[1] A good eyewitness account of this treatment is given by Schinz, *Deutsch-Südwest-Afrika*, 340–1; cf. also D. F. Bleek, *Naron*, 29.
[2] " Religiösen Vorstellungen usw.," 411; cf. pp. 183 sq. above.
[3] Nolte, " Krankheiten und Heilmittel der Nama und Buschmänner," *D. Kol-Ztg.*, 1886, p. 629 sq.; Chapman, *Travels in S. Africa*, i, 119, 282–3; ii, 74, 182; Kaufmann, loc. cit.; Dornan, loc. cit.; Vedder, " Grammatik der !Ko-Buschmannsprache," 8–9; Fourie, loc. cit.
[4] Op. cit., 142.

755
[782]
757
278
[824]
752
[114]

2: Schapera E-4, 5 (no date)1930
FX13 Hottentot
Bushmen FX10

752 which he puts into the fire, and brands me all over the forehead, heating it again and again. It is the heat of the fire that gives the relief, not the root, nor any of his genuflexions over me."[1] Surgical practice seems to be limited to incisions made in the skin, but Vedder notes that cupping is also employed among the Kung. Incisions are made in the patient's skin and covered with the horn of an animal, through which the blood is then sucked out.[2]

●278 752 [114] The existence of specific antidotes for arrow poisoning is reported by several of the older writers, but their statements lack confirmation. The effects of such a wound, as far as can be ascertained, are almost invariably fatal.[3] The Naron also have no antidote for snake poison, the effects of which they try to counteract by tying the snake skin round the bite. Kaufmann, however, records that among the Auen the magician makes out of the black mamba, which he alone may eat, an antidote supposed to act against all snake bites except that of the mamba itself. He dries and powders the lungs, gall, and liver, as well as the poison in the fangs, and mixes this powder with the fat of the snake. The salve thus made is rubbed into the wound, which is first sucked out. At the same time several deep cuts are made in the upper arm, from which blood is allowed to stream freely.[4] There is nothing [114] in Kaufmann's account to indicate whether this information is based on personal observation or merely upon hearsay, so that it must be received with caution. Chapman, a careful obser[illegible] whose hunting expeditions brought him into frequent close contact with the Bushmen in the North-West Kalahari, describes another form of antidote with which he himself saw the Bushmen cure themselves of snake bite. This is a creeping tendrilous plant, called " eokam " by the Bushmen, but unfortunately not identified by him. About eight or ten of its seeds, either eaten or taken as a decoction, act as an emetic. The dose is repeated about three times, when the patient is cured. " They also tattoo and scarify their bodies, and make an incision near the wound, which they suck with some of the root, chewed, in their mouths. This is evidently to prevent the poison acting upon the gums in case of bleeding. The sucking out of the poison is not necessary, but is done by way of precaution. Bushmen having a bit of this root on their necks laugh at snake-bites." [5]

751 Other writers mention that " doctors " sometimes render themselves

[1] Op. cit., ii, 182. [2] Loc. cit.
[3] The question is discussed by Schapera, " Bushman Arrow Poisons," 212–13.
[4] D. F. Bleek, op. cit., 19; Kaufmann, op. cit., 159. [5] Op. cit., ii, 74.